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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,915

04/02/2007

George Hubbard

A4-144 CIP US

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MOLEX INCORPORATED  
2222 WELLINGTON COURT  
LISLE, IL 60532

EXAMINER

GILMAN, ALEXANDER

ART UNIT

PAPER NUMBER

2833

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/530,915	<b>Applicant(s)</b> HUBBARD ET AL.	
	<b>Examiner</b> Alexander D. Gilman	<b>Art Unit</b> 2833	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-33 and 35 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 34, 36, 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 10-15, 20, 21, 25, 33, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Joly.

Lin (US 6,852,252) discloses an connector for connecting a cable to a printed wiring board comprising:

a dielectric housing (20, 30) ;

a conductive signal contact (35, 37) mounted on said housing (30) and adapted for mating with a signal conductor (81) of the cable; and

a connector (40) connected to said housing, a receptacle defined between said spring connector and said housing, said connector having an arm (410) for causing said signal contact on said housing to electrically connect to a signal contact on the printed wiring board when the printed wiring board is inserted into said receptacle.

Joly (US 5,975,959) disclose spring terminals (10) with a deflectable arm.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Lin's connector with elastic terminals, as taught by Joly , to provide a certain contact force to PCB contact pads and ,hence, improve contacts.

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With regard to claim 2, Lin-Joly disclose that said spring connector is a separate member from said housing, such that said spring connector (Lin) can be engaged and disengaged from said housing, said spring connector including a body and said deflectable arm (Joly) is provided in said body.

With regard to claim 3, Lin-Joly disclose (Joly) that said deflectable arm is curved in an unflexed position.

With regard to claim 4, Lin-Joly disclose (Lin) a ground shield (50) attached to said housing,

With regard to claims 4-7, 33 Lin-Joly disclose (Lin) that a plurality of the connector terminals which can be assigned as ground terminals being capable of flexing (Joly) relative to said body when the connection between said ground shield and the ground terminal on the printed wiring board is made wherein said ground terminal is electrically isolated from said signal terminal in said body.

With regard to claim 10, Lin-Joly disclose (Lin) that said receptacle (Fig. 2) has openings on two sides thereof into which the printed wiring board can be inserted.

With regard to claims 11, 13, 35, Lin-Joly disclose (Lin) that said signal contacts are mounted symmetrically regarding a mating axis.

With regard to claims 12, 25, Lin-Joly disclose (Lin) that a ground shield (50) attached to said housing.

With regard to claim 14, Lin-Joly disclose (Lin) that ground contacts provided on said housing can be disposed on opposite sides of said signal contact and means for connecting said ground contacts with said ground shield (col. 4, lines 28-30).

With regard to claim 15, Lin-Joly disclose (Lin) a conductive layer (722) provided between the housing and said ground shield.

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With regard to claims 20, 21 Lin-Joly do not disclose T-shaped configuration of the signal contact and a location of ground contacts

Applicants have presented no argument which convinces that the particular configuration of the signal contact is significant or is anything more than one of numerous configurations a person of ordinary skill in the art would find obvious for purpose of assembling a cable connector. In re Dailey, 149 USPQ 47 (CCPA 1976).

Also, it was held that there would be no invention in shifting location of parts to a different position since the operation of the device would not be thereby modified. In re Japikse, 86 USPQ 70.

Claims 16, 17, 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin-Joly as applied to claim 1 above, and further in view of Mullin and Lang et al.

Mullin (US 7,021,967) discloses (Fig. 5) ground shield with an opening through which the cable is inserted said opening having a first section which is larger than the cable to allow the cable to be freely inserted therein and second section which is smaller than the cable into which the cable can be inserted, including a tapered section between said first and second sections of said opening.

Also Mullin discloses (Fig. 2) that said housing includes a passageway into which at least a portion of the cable is inserted, wherein said signal contact extends into said passageway.

Lang et al (US 6,135,818) disclose that said passageway includes a plurality of ribs (14) therein for gripping the cable.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the

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invention was made to use the structural features for attaching a cable to a connector, as taught by Mulli and Lng et al, to dependable fix the cable to housing and the shield.

With regard to claim 28, Lang et al disclose that housing is formed by first (7) and second (8) bodies which are joined together.

With regard to claim 29, Lin-Joly disclose (Lin) a ground shield (50, 50)

With regard to claim 30, Lin-Joly disclose (Lin) that said ground shield includes a pair of arms (52) for joining said first and second bodies together.

With regard to claim 32, Lin-Joly disclose (Lin) at least one protrusion (22) formed of a dielectric material on the housing proximate to the signal contact.

Claims 18, 19, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin-Joly as applied to claim 1 above, and further in view of Asick et al.

Asick et al (US 6,135,818) disclose that said ground shield includes a pair of wings (48) capable of being attached to a guide rail in a device.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the shield with wings, as taught by Asick et al, to fixedly mount the connector

### ***Allowable Subject Matter***

Claims 8, 9, 34, 36, 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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No prior art has been found to anticipate or render obvious the presently claimed subject matter. Specifically, none of the prior art of record discloses the combination of the limitations presented including

the deflectable arm being formed as part of said ground shield (claim 8);

the plurality of plated through apertures provided through the housing for providing the electrical connection from the ground contacts to the ground shield (34);

the connector's deflectable arm biasing a flexible printed wiring board against said signal contact mounted on said housing (claim 36).

### ***Response to Arguments***

Applicant's arguments filed 3/11/2008 have been fully considered but they are not persuasive.

Applicants argue that in Lin the housing's component 20 is conductive shell, while a dielectric housing is claimed.

Lin does not explicitly disclose a material of housing component 20. Considering a configuration of this element, it would be cost-effective to mold it from plastic with metal coating to make a surface of the housing conductive in order to shield signal contacts. (For example, US 6,887,094- col. 1, 13-23; US 6,743,031, Fig. 4; US 5,141,454, col. 3, lines 25-34).

The timely submission under 37 CFR 1.129(a) filed on 3/11/2008 is not fully responsive to the prior Office action because just a material -which was not explicitly disclosed - of one of components, is argued. Since the submission appears to be a *bona fide* attempt to provide a complete reply to the prior Office action, applicant is given a shortened statutory period of ONE MONTH or THIRTY DAYS from the mailing date of this letter, whichever is longer, to submit a complete reply.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander D. Gilman whose telephone number is 571 272-2004. The examiner can normally be reached on Monday-Friday, 10:30 a.m. - 8:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on 571 272-2800 ext. 33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander D Gilman/  
Primary Examiner  
Art Unit 2833

3/31/08